



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,131	07/24/2003	Yoshio Sasaki	B-5162 621098-8	3878
36716	7590	04/06/2006	EXAMINER	
LADAS & PARRY 5670 WILSHIRE BOULEVARD, SUITE 2100 LOS ANGELES, CA 90036-5679			GUPTA, PARUL H	
			ART UNIT	PAPER NUMBER

2627

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/627,131

Applicant(s)

SASAKI ET AL.

Examiner

Parul Gupta

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Claims 1-7 are pending for examination as interpreted by the examiner. The IDS filed on 3/14/05 was considered.

#### ***Specification***

2. The disclosure is objected to because of the following informalities: minor typographical errors such as the use of the word "lever" instead of "level" in paragraph 0069. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 6, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagawa, US Patent Publication 2001/0026522.

Regarding claim 1, Yanagawa teaches a spherical aberration correcting apparatus comprising: a recording unit (figure 1) configured to record a piece of information through radiation of an optical beam onto an optical disk (radiation done by element 21 of figure 3); a reflected-light level detecting unit configured to detect a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information (element 32 of figure 4); a correction amount deciding unit ("system control circuit" of element 6 in figure 2) configured to decide a correction amount for spherical aberration on the basis of the level of the reflected-light (explained as the "current operating status of the disc player" in paragraph 0035); and a spherical

aberration correcting unit ("servo control circuit" of element 5 in figure 2) configured to correct the spherical aberration (by moving the collimator lens of element 22 in figure 3) by using the correction amount.

Regarding claim 4, Yanagawa teaches the spherical aberration correcting apparatus according to claim 1, wherein the reflected-light level detecting unit (element 32 of figure 4) is configured to output a pit level ("output signal of a level corresponding to an amount of received light" of lines 5-6) of the optical beam under the recording operation as a signal indicative of the level of the reflected-light (paragraph 0021).

Regarding claim 6, Yanagawa teaches the spherical aberration correcting apparatus according to claim 1, further comprising a controlling unit ("system control circuit" of element 6 in figure 2) configured to enable the reflected-light level detecting unit (element 32 of figure 4), the correction amount deciding unit ("system control circuit" of element 6 in figure 2), and the spherical aberration correcting unit ("servo control circuit" of element 5 in figure 2) to perform the correction for the spherical aberration in response to a start of the recording operation (paragraphs 0032 and 0037-0038).

Regarding claim 7, Yanagawa teaches a spherical aberration correcting method comprising the steps of: recording a piece of information through radiation of an optical beam onto an optical disk (paragraph 0020); detecting a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information (paragraph 0021); deciding a correction amount for spherical aberration on the basis of the level of the reflected-light (paragraph 0039); and correcting the spherical aberration by using the correction amount (paragraph 0039), wherein the recording step is continued until the recording operation for the information is instructed

to stop, during which time the light level detecting step (explained in paragraph 0022), the correction amount deciding amount, and the spherical aberration correcting step are repeatedly performed in sequence (shown in figure 8 and explained in paragraph 0039). The movement of the collimator lens is used as the method of correction for spherical aberration.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagawa in view of Furukawa, US Patent 6,643,230.

Yanagawa teaches the limitations of claim 1 of a spherical aberration correcting apparatus.

Regarding claim 2, Yanagawa does not but Furukawa teaches the spherical aberration correcting apparatus, wherein the correction amount deciding unit comprises: a determining element configured to determine whether or not the spherical aberration obtained after the aberration correction has been improved, by mutually comparing both levels of the reflected light obtained before and after the aberration correction carried out by the spherical aberration correcting unit (column 5, line 66-column 6, line 13); a first processing element ("controller" of element 50 in figure 4) configured to update the correction amount by changing the correction amount in a direction of either the same positive or negative polarity as the polarity used for deciding the correction amount last

time (column 5, lines 11-14 explains that a new correction amount is added to the pre-existing correction amount), the spherical aberration being subject to changes in the direction of either the positive or negative polarity, in cases where it is determined by the determining unit that the spherical amount has been improved; and a second processing element configured to delete the correction amount currently set but decided last time, in cases where it is determined by the determining element that the spherical amount has not to be improved (column 5, lines 41-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the correction amount deciding unit of Furukawa into the apparatus of Yanagawa. This would create accurate reading of information even if spherical aberration were generated by the thickness error in the transparent substrate of an optical disk (column 1, lines 31-35 of Furukawa).

Regarding claim 3, Yanagawa does not but Furukawa teaches the spherical aberration correcting apparatus according to claim 2, wherein the correction amount deciding unit further comprises a third processing element (same functions performed by "controller" of element 50 in figure 4) configured to update the correction amount by changing the correction amount in a direction of either the positive or negative polarity that is opposite to the polarity used for deciding the correction amount last time, in cases where it is determined by the determining unit that the spherical amount has not to be improved. The mere statement of a predetermined value being added suggests that polarity is not preset in the invention of Furukawa.

Regarding claim 5, Yanagawa teaches the spherical aberration correcting apparatus according to claim 1, wherein the reflected-light level detecting unit (element

32 of figure 4) comprises: a detecting element configured to detect a pit level of the optical beam under the recording operation level ("output signal of a level corresponding to an amount of received light" of lines 5-6 of paragraph 0021) and at least one of a read level and a write level (inherent in a recording pulse); and a calculation element ("head amplifier" of element 3 of figure 2, further described in paragraph 0026).

Yanagawa does not but Furukawa teaches the device configured to calculate a pit ratio indicating a ratio between the pit level (a similar method of gaining the "residual error value" is explained in the given section) and one of the read level, the write level, and a recording power (a similar method of gaining the "amplitude width value of the disturbance signal" is explained in the given section) and to output the pit ratio as a signal indicative of the level of the reflected-light (column 3, line 60-column 4, line 25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the correction amount deciding unit of Furukawa into the apparatus of Yanagawa. This would create accurate reading of information even if spherical aberration were generated by the thickness error in the transparent substrate of an optical disk (column 1, lines 31-35 of Furukawa).

### ***Conclusion***


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hirai, US Patent 7,006,411, discloses a similar spherical aberration correction apparatus, including the detection unit, correction unit, and control circuit. Hirai, US Patent Publication 2003/0227859, discloses a similar method of determining whether or not the aberration correction has been improved by comparing the levels of reflected light before and after the correction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is 571-272-5260. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PHG  
3/29/06

  
**WILLIAM KORZUCH**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800